#21

Patents

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
PELLETT ET AL.	)	
	)	
Serial No.: **08/480,850**	)	Art Unit: **1815**
	)	
Filed: **June 7, 1995**	)	Examiner: **Lee**
	)	
For: **NOVEL BACULOVIRUS EXPRESSION VECTORS AND RECOMBINANT ANTIGENS FOR DETECTING TYPE SPECIFIC ANTIBODIES TO HERPES SIMPLEX VIRUS**	)	

DECLARATION OF PHILIP E. PELLETT UNDER 37 CFR § 1.132

I, PHILIP E. PELLETT, declare as follows:

1. I am a co-inventor in the above-identified patent application. I am employed as a research scientist in the Viral Exanthems Branch, Division of Viral and Rickettsial Diseases of the Centers for Disease Control in Atlanta, Georgia. A copy of my *Curriculum Vitae* is attached. My declaration is based on my scientific experience and understanding of the subject matter as an expert in the art.

2. My colleagues and I designed several experiments to demonstrate differences between herpesvirus glycoprotein gG-1 produced using our novel recombinant baculovirus vector AcDSMgG-1 and the herpesvirus glycoprotein gG-1 produced using the baculovirus vector Ac373'gG-1. The results of these experiments are best shown in the data published in the scientific article entitled "Expression of HSV-1 and HSV-2 Glycoprotein G in Insect Cells by Using a Novel Baculovirus Expression Vector", authored by Demetrio Sanchez-Martinez and myself in *Virology* 182: 229-238 (1991), a reprint of which is attached hereto as Exhibit A.

The novel baculovirus vector AcDSMgG-1 was constructed by effectively removing a nucleotide region from the pAcDSM transfer vector (between the *Pst*I and *Hind*III restriction sites) and inserting in its place a synthetic oligomer followed by the engineered gene as shown in Figure 1, Panel B of Exhibit A. As shown in Figure 1, Panel C of Exhibit A (page 231), in the novel AcDSMgG-1 vector, the nucleotide sequence 5' to the translation initiation codon is identical to and aligns with that of wild type AcNPV (polyhedrin), whereas the Ac373'gG-1 vector includes 21 extraneous nucleotides. By constructing a vector in this way, the novel baculovirus transfer vector pAcDSM joins the herpes simplex virus type 1 glycoprotein gene (or type 2 glycoprotein gene) precisely at the translation initiation codon of the polyhedrin gene.

It was unexpectedly discovered that the novel baculovirus vector AcDSMgG-1 not only produces more glycoprotein than the Ac373'gG-1 vector, indicating a **higher level of expression**, but the novel baculovirus vector produces proteins having different electrophoretic band patterns than produced from the Ac373'gG-1 vector, indicating that the recombinant proteins are **structurally different**. These observations are explained on page 233, left column, first full paragraph, of Exhibit A, which is reproduced as follows:

> Expression of the recombinant gG-1 is differed in two respects. (i) The intensity of the reaction with both antibodies was higher in extracts of cells infected with AcDSMgG-1 than with Ac373'gG-1 (Fig. 2A). (ii) In extracts of Sf9 cells infected with AcDSMgG-1, 42K reacted more than 37K. In extracts of Sf9 cells infected with Ac373'gG-1, the opposite was true, with 42K being very faint.

These results are best shown in Figure 2 of Exhibit A (page 233). Panel A of Figure 2 shows photographs of two electrophoretic gels. The gel on the left was reacted with antibodies from human serum identified as HSV-1 positive and HSV-2 negative. The gel on the right was reacted with a monoclonal antibody specific for gG-1 (H1379). The left two lanes of each gel represent SDS-PAGE separations of the glycoprotein products of vector Ac373'gG-1 and novel vector AcDSMgG-1, respectively, with molecular mass standards shown on the left side of each gel. The remaining two lanes of each gel are controls.

In both the human serum reactive and the monoclonal antibody reactive gels, the glycoprotein product of vector Ac373'gG-1 shows a high intensity band at approximately 37 kDa and a low intensity band at 42 kDa. In contrast, the glycoprotein product produced by the novel vector AcDSMgG-1 shows a very high intensity band at approximately 42 kDa and a lower intensity band at approximately 37 kDa. It is interesting to note that the 37 kDa bands for both the

Ac373'gG-1 and AcDSMgG-1 have similar intensities, demonstrating that the differences in intensities for the 42 kDa band are due to physical differences in the proteins rather than the overall increase in expression by the AcDSMgG-1 vector.

Panel B of Figure 2 is a photograph of a slot-blot analysis of serial dilutions of gG-1 expressed in Sf9 cells by the recombinant vectors Ac373'gG-1 and AcDSMgG-1. The dilution factor is shown to the right. Cell extracts similar to those used in Panel A were four-fold serially diluted in phosphate-buffered saline, bound to a nitrocellulose membrane using a slot-blot apparatus, and reacted with the gG-1-specific monoclonal antibody used in Panel A (H1379). As can be clearly seen in the slot-blot, immunoreactive protein diluted by a factor of 64 was detected in the cell extracts produced by the novel baculovirus vector AcDSMgG-1, whereas immunoreactive protein produced by the Ac373'gG-1 vector was only detectable up to a dilution factor of 16. Therefore, the level of expression of gG-1 by the baculovirus vector AcDSMgG-1 was approximately four-fold greater than the level of gG-1 expression by the Ac373'gG-1 vector. It is well known by those skilled in the art that a recombinant protein produced at a higher level of expression provides a purer product.

In conclusion, the data described above clearly demonstrate that the glycoprotein gG-1 produced from the novel baculovirus vector AcDSMgG-1 is physically different from the gG-1 glycoprotein produced by the baculovirus vector Ac373'gG-1. In addition, the level of expression of gG-1 by the novel baculovirus vector AcDSMgG-1 is significantly higher, thereby resulting in a purer product.

3. The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment or both under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the validity of the above-referenced application or any patent issuing thereon.

February 23, 1998
DATE

Philip E. Pellett
PHILIP E. PELLETT

CURRICULUM VITAE

Philip Edwin Pellett

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Education:

B.S. 1980
Major in Chemistry
Honors Tutorial College
Ohio University
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Ph.D. 1986
Committee on Virology
University of Chicago
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Professional Experience:

Chief, Herpesvirus Section, Centers for Disease Control and Prevention, 1/86 to present. Promotion from GS-12 to GM-13, 7/87; tenure earned 1/5/89; promotion from GM-13 to GM-14, 12/90; promotion to GS-15, 8/95.
Adjunct Graduate Faculty, Biomedical Sciences Program, Morehouse School of Medicine, 4/93 to present.
Adjunct Assistant Professor of Biology, Georgia State University, 4/93 to present.
Adjunct Professor of Microbiology and Immunology, Emory University School of Medicine, 6/90 to present.
Adjunct Professor, Experimental Pathology Program, Emory University School of Medicine, 6/88 to 6/90.
Doctoral Candidate, University of Chicago, Committee on Virology, Laboratory of Dr. Bernard Roizman, 1981 to 1985.
Research Associate, Ohio University, Laboratory of Dr. Thomas Wagner, 3/80 to 11/80.

Honors and Awards:

Carlson Chemistry Scholarship, 1976-1980, Ohio University
Sophomore Award, American Chemical Society, 1978
Cellular and Molecular Biology Training Grant, NRSA/NIH 1981 - 1985
Employee Invention Awards, CDC, 1992, 1993 (4), 1995 (3)
Science and Technology Advancement Fellowship, Japan, 1996

Reviewing and Consulting:

National Science Foundation, ad hoc grant review, 1997.
Consultant to the Director, National Cancer Institute on the role of human herpesvirus 8 in prostate cancer. 1997.
Consultant to NIAID on Detection of Simian Cytomegaloviruses in Human Tissue, 1996.
Member, *Task Force on Herpes Simplex Virus Resistance*, 1995 to present.
Member, Herpesvirus Study Group of the Vertebrate Virus Subcommittee of ICTV, 1993 to present.
Editor, *Archives of Virology*, 1994 to present.
Member of Advisory Board, *Archives of Virology*, 1990 to 1993.
Ad hoc reviewer for *Antimicrobial Agents and Chemotherapy, Antiviral Research, Diagnostic Methods in Infectious Diseases, Emerging Infectious Diseases, Intervirology, Investigative Opthalmology & Visual Science, Journal of Clinical Microbiology, Journal of General Virology, Journal of Immunology, Journal of Infectious Diseases, Journal of Medical Virology, Journal of Virology, New England Journal of Medicine, Oncogene, Proceedings of the National Academy of Sciences, Science, Viral Immunology, Virology,* and *Virus Research.*
Consultant to the Food and Drug Administration and National Cancer Institute for review of license proposals and contracts.
Review panel, NIH AIDS Clinical Trial Units (ACTUs) laboratory components, 1991
Special Review panel, NIH National Center for Research Resources, January, 1992.
NIH AIDS Related Research Study Section C (ad hoc), June, 1993.
Review panel, site visit program and promotion review, Food and Drug Administration, July, 1994.
Corespondent reviewer, NIH NCI Special Review Committee, November, 1994.
Correspondent reviewer, North Carolina Biotechnology Center, April, 1995.

Correspondent reviewer, USDA, April, 1995.

Students and Fellows:

Dr. Gary Lindquester - 11/86 to 6/88. National Research Council postdoctoral fellow. Associate Professor, Biology Department, Rhodes College, Memphis, Tennessee.
Dr. Demetrio Sanchez-Martinez - 1/87 to 4/93. Sponsored by a Spanish foundation, Fundacion Gaspar de Portola. Currently Director of Molecular Biology, Biokit USA, Lexington, MA.
Dr. Masahiro Yamamoto - 1988-1989 National Research Council postdoctoral fellow. Curently on faculty of Kyushu University, Fukuoka, Japan.
Dr. Jodi Black - Ph.D. April, 1990, Experimental Pathology Program, Emory University, Atlanta, Georgia. I was the thesis advisor. Head of the Cellular Virology Laboratory in the Herpesvirus Section at CDC.
Dr. Geraldina Dominguez - 6/91 to present. Dissertation committee in the Department of Microbiology, Georgia State University. National Research Council postdoctoral fellow, CDC 1991-1993. CDC Visiting Scientist, 1993-present.
Dr. Naoki Inoue - 10/91 to 8/93. Visiting scientist from the National Institute of Health, Japan.
Dr. Lee Marr - Graduate committee, Georgia State University, Ph.D. 1993.
Dr. Mahadvi Kadakia - Graduate committee, University of Pittsburgh, Ph.D. 1994.
Dr. Cynthia A. Derdeyn - Graduate committee, Georgia State University, Ph.D. 1994.
Dr. Chin-Yen Wang - Graduate committee, Georgia State University, Ph.D. 1994.
Dr. Ren-Yo Forng - Graduate committee, Georgia State University, Ph.D., 1995.
Dr. Ingrid Ruf - Graduate committee, Emory University, Ph.D., 1995.
Robert D. Allen - Graduate student, Georgia Institute of Technology. Thesis research was done in my laboratory. M.S. 1993. Currently in doctoral program at Columbia University.
Michael Mena - Undergraduate honors thesis advisor, Emory University, 1993.
Peter Krug - Graduate committee, Emory University, 1994 to present.
Christine Ko - Undergraduate research student, 1994 to 1995. Howard Hughes fellowship summer of 1994.
Dr. Jeffrey Rapp - National Research Council Postdoctoral Fellow, 4/93 to 9/95. Currently a postdoctoral fellow at the University of Georgia.
Laurie Tate - Graduate student, Emory University. Dissertation advisor, 6/95 to present.
Susan Ropp - Graduate committee, Georgia State University, 1996 to present.
Dr. Yi Zhou - Graduate student, University of Miami. External dissertation examiner, 1996.
Dr. Marta Barenys - postdoctoral fellow, 10/95 to 4/97.
Dr. Yuan-Xiang Meng - postdoctoral fellow, 1/96 to present.
Anne T. Sibley - Undergraduate research student, Emory University, 1996-1997 academic year, ORISE fellowship, 1997-1998.
Michael Cannon - Doctoral student, Emory School of Public Health, dissertation advisor, 6/97 to present.

Supervisory Responsibilities:

I am Chief of the Herpesvirus Section, a group of 14 scientists, six at the doctoral level.

Herpesvirus Laboratory:

My laboratory is focused on studies of the biology and molecular biology of herpesvirus infections. Current activities include: expression of herpesvirus proteins via recombinant baculoviruses for use in physical studies and as diagnostic reagents, analysis of the physical properties and nucleotide sequences of the human herpesvirus 6B, 7, and 8 genomes, examination of the interaction of these viruses with host cells, creation of novel diagnostic reagents and tests for herpesviruses, identification of pathways of regulation of HHV-6 macromolecular synthesis, and studies of the epidemiology and clinical spectrum of human herpesviruses 6, 7, and 8.

Patent Applications:

Novel baculovirus expression vectors and recombinant antigens for detecting type-specific antibodies to herpes simplex virus. 1991. Sanchez-Martinez, D. and P.E. Pellett.
Compositions and methods for detecting human herpesvirus 6 strain Z29. 1992. Sanchez-Martinez, D., T.R. Dambaugh, and P.E. Pellett.
Compositions and methods for detecting human herpesvirus 7. 1992. Black, J.B., N. Inoue, and P.E. Pellett.

Publications:

1. Kousoulas, K.G., Pellett, P.E., Pereira, L. and B. Roizman. 1984. Mutations affecting conformation or sequence of neutralizing epitopes identified by reactivity of viable plaques segregated from *syn* and *ts* domains of HSV-1 (F) gB gene. Virology 135:379-394.

2. Pellett, P.E., Kousoulas, K.G., Pereira, L. and B. Roizman. 1985. Anatomy of the herpes simplex virus 1 strain F glycoprotein B gene: Primary sequence and predicted structure of the wild type and of mononoclonal antibody-resistant mutants. J. Virol. 53:243-253.

3. Pellett, P.E., Biggin, M.D., Barrell, B. and B. Roizman. 1985. Epstein-Barr virus may encode a protein showing significant amino acid and predicted secondary structure homology with the glycoprotein B of herpes simplex virus. J. Virol. 56:807-813.

4. Pellett, P.E., McKnight, J.L.C., Jenkins, F.J. and B. Roizman. 1985. Nucleotide sequence and predicted amino acid sequence of a protein encoded in a small fragment of herpes simplex virus DNA capable of *trans*-inducing α genes. Proc. Nat. Acad. Sci. 82:5870-5874.

5. McKnight, J.L.C., Kristie, T.M., Silver, S., Pellett, P.E., Mavromara-Nazos, P., Campadelli-Fiume, G., Arsenakis, M. and B. Roizman. 1986. Regulation of herpes simplex virus 1 gene expression: The effect of genomic environments and its implications for model systems. In *Control of Gene Expression and Replication, Cancer Cells*, Volume 4 (M. Botchan, T. Grodzicker and P. Sharp, eds.), Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, pp. 163-173.

6. Pellett, P.E., Jenkins, F.J., Ackermann, M., Sarmiento, M. and B. Roizman. 1986. Transcription initiation sites and nucleotide sequence of a herpes simplex virus 1 gene conserved in Epstein-Barr virus genome and reported to affect the transport of viral glycoproteins. J. Virol. 60:1134-1140.

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16. Sánchez-Martínez, D. and P.E. Pellett. 1991. Expression of HSV-1 and HSV-2 glycoprotein G in insect cells by using a novel baculovirus expression vector. Virology 182:229-238.

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18. Pellett, P.E., J.B. Black, and M. Yamamoto. 1992. Human herpesvirus 6: The virus, and the search for its role as a human pathogen. Adv. Virus Res. 41:1-52.

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22. Black, J.B., N. Inoue, K. Kite-Powell, S. Zaki, and P.E. Pellett. 1993. Frequent isolation of human herpesvirus 7 from saliva. Virus Res. 29:91-98.

23. Pellett, P.E., D. Sánchez-Martínez, G. Dominguez, J.B. Black, E. Anton, C. Greenamoyer, and T.R. Dambaugh. 1993. A strongly immunoreactive virion protein of human herpesvirus 6 variant B strain Z29: identification and characterization of the gene and mapping of a variant-specific monoclonal antibody reactive domain. Virology 195:521-531.

24. Pellett, P.E. and J.A. Stewart. 1996. Human herpesvirus 6. In *Oxford Textbook of Medicine, 3rd edition*, D. Weatherall, J.G.G. Ledingham, and D.A. Warrell, eds., Oxford University Press, Oxford, Vol. 1, pp. 364-365.

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26. Black, J.B. and P.E. Pellett. 1993. Human herpesvirus 7. Rev. Med. Virol. 3:217-223.

27. Pellett, P.E. 1993. A virus comes of age. Book review. Virus Res. 29:211-212.

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43. Black, J.B., E.L. Durigon, K. Kite-Powell, L.T.M. de Souza, S.P. Curti, A.M.S. Afonso, M. Theobaldo, and P.E. Pellett. 1996. Human herpesvirus 6 and human herpesvirus 7 seroconversion in children clinically diagnosed with measles or rubella. Clin. Inf. Dis. 23:1156-1158.

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45. Lindquester, G.J., C.A. Greenamoyer, E.D. Anton, J.J. O'Brian, P.E. Pellett, and T.R. Dambaugh. 1997. Comparison of a 20 kb region of human herpesvirus 6B with other human betaherpesviruses reveals conserved replication genes and adjacent divergent open reading frames. Arch. Virol. 142:193-204.

46. Lindquester, G.J., J.J. O'Brian, E.D. Anton, C.A. Greenamoyer, P.E. Pellett, and T.R. Dambaugh. 1997. Genetic content of a 20.9 kb segment of human herpesvirus 6B strain Z29 spanning the homologs of human herpesvirus 6A genes U40-57 and containing the origin of replication. Arch. Virol. 142:103-123.

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48. Braun, D.K., G. Dominguez, and P.E. Pellett. 1997. Human herpesvirus 6. Clin. Micro. Rev. 10:521-567.

49. Pellett, P.E. 1997. Human herpesviruses 6, 7, and 8. Chapter 36. In Vol. I of *Pathology of Infectious Diseases*, D. Connor and F. Chandler, eds. Appleton & Lange, Stamford. pp. 329-346.

50. Black, J.B., D.A. Burns, C.S. Goldsmith, P.M. Feorino, K. Kite-Powell, R.F. Schinazi, P.W. Krug, and P.E. Pellett. Biologic properties of human herpesvirus 7 strain SB. Virus Research, in press.

51. Meng, Y-X. and P.E. Pellett. 1998. Recently discovered herpesviruses: human herpesviruses 6, 7, and 8. In Ahmed, R. and I. Chen, eds., Persistent viral infections, John Wiley and Sons. In press.

52. Black, J.B. and P.E. Pellett. Antiviral screening assays for human herpesviruses 6 and 7. In: Kinchington, D and R. Schinazi, eds. Methods in Cellular and Molecular Biology: antiviral evaluation. Humana Press, in press.

53. Pau, C.-P., L.L. Lam, T.J. Spira, J.B. Black, J.A. Stewart, P.E. Pellett, and R.A. Respess. Mapping and serodiagnostic application of a dominant epitope within the human herpesvirus 8 ORF 65 encoded protein. Submitted.

Presentations at Scientific Meetings:
* denotes an invited presentation.

1. Kousoulas, K.G., Pellett, P.E., Pereira, L. and B. Roizman. 1983. The major antigenic domains of the gA/gB glycoprotein gene of HSV-1(F). Eighth International Herpesvirus Workshop, Oxford, England.

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3. McKnight, J.L.C., Kristie, T.M., Silver, S., Pellett, P.E., Mavromara-Nazos, P., Campadelli-Fiume, G., Arsenakis, M. and B. Roizman. 1985. Regulation of herpes simplex virus (HSV) genes in different chromosomal environments by *trans*-acting factors. Cold Spring Harbor DNA Tumor Virus Meeting.

4. Pellett, P.E., Jenkins, F.J., Sarmiento-Batterson, M., Ackermann, M. and B. Roizman. 1986. Characterization of a HSV-1 gene mapping between ICP 8 and glycoprotein B and detection of its encoded polypeptide in infected cells. American Society for Virology, Annual Meeting, Santa Barbara, California.

5. Bohan, C.A., Rando, R.F., Pellett, P., Luciw, and A. Srinivasan. 1987. Herpesviruses - possible cofactors in AIDS pathogenesis. UCLA Symposium on Human Retroviruses, Cancer & AIDS: Approaches to Prevention and Therapy, Keystone Colorado.

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9. Feorino, P., Warfield, D., Pellett, P., Lindquester, G., Stewart, J., Sanderlin, K., Black, J., and C. Lopez. 1988. Characteristics of human herpesvirus-6. Fifth International Symposium on Infections in the Immunocompromised Host. The Netherlands.

10. Feorino, P., Warfield, D., Pellett, P., Lindquester, G., Stewart, J., Sanderlin, K., Black, J., and C. Lopez. 1988. Characteristics of human herpesvirus-6. IVth International Conference on AIDS. Stockholm, Sweeden.

11. Lindquester, G.J., Lopez, C., Sanderlin, K., Black, J., Carlone, G., and P.E. Pellett. 1988. Physical properties of the human herpesvirus 6 genome. 13th International Herpesvirus Workshop. Irvine, CA.

12. Black, J.B., Pellett. P.E., Stewart, J.A., Sanderlin. K.C., Goldsmith, C.S., and C. Lopez. 1988. Growth properties of human herpesvirus 6 strain Z29. 13th International Herpesvirus Workshop. Irvine, CA.

13. Meissner, C., Fulton, D., Sanderlin, K. and P. Pellett. Human herpes virus-6 and the etiology of Kawasaki disease. 1988. 3rd International Kawasaki Disease Symposium. Tokyo, Japan.

14. Pellett, P.E.*, Bashir, R., Black, J., Dambaugh, T., Lindquester, G., Lopez, C., Sanderlin, K., Singer, R., Stamey, F., Stewart, J. and M. Yamamoto. 1989. Human herpesvirus 6: diagnosis and disease. 5th Clinical Virology Symposium. Clearwater Beach, FL.

15. Yamamoto, M., Black, J., Stewart, J., Pellett, P.E., and C. Lopez. 1989. Monoclonal antibodies against human herpesvirus 6. 5th Clinical Virology Symposium. Clearwater Beach, FL.

16. Sánchez-Martinez, D. and P.E. Pellett. 1989. Expression of HSV-1- and HSV-2-glycoprotein G in insect cells by using a baculovirus transfer vector. American Society for Virology. Annual Meeting. London, Ontario.

17. Dambaugh, T., E. Anton, C. Greenamoyer, G. Lindquester, and P. Pellett. 1989. Nucleotide sequence analysis of HHV-6 strain Z-29. 14th International Herpesvirus Workshop. Nyborg Strand, Denmark.

18. Yamamoto, M., J. Black, J. Stewart, P.E. Pellett, and C. Lopez. 1989. Properties of human herpesvirus 6 virions. 14th International Herpesvirus Workshop. Nyborg Strand, Denmark.

19. Pellett, P.E.* 1989. Molecular properties of HHV-6. 4th International Conference on Immunobiology and Prophylaxis of Human Herpesvirus Infections, Fukuoka, Japan.

20. Lindquester, G.J., T. Dambaugh, R. Allen, and P. Pellett. 1989. Structural and preliminary sequence analysis of the human herpesvirus 6 genome. 1989 International Symposium on Medical Virology, San Francisco, CA.

21. Sanchez-Martinez, D., and P.E. Pellett. 1990. Baculovirus expressed antigens for herpesvirus serodiagnostic tests. Biotechnology of Infectious Diseases Conference, CDC, May, 1990.

22. Dambaugh, T.R., C.A. Greenamoyer, E.D. Anton, J.J. O'Brien, G.J. Lindquester, and P.E. Pellett. 1990. Genetic mapping of HHV-6 by DNA sequencing. 15th International Herpesvirus Workshop, Washington, DC.

23. Black, J.B., C. Lopez, and P.E. Pellett. 1990. Stimulation of host cell protein synthesis by human herpesvirus 6. 15th International Herpesvirus Workshop, Washington D.C.

24. Sanchez-Martinez, D., and P.E. Pellett. 1990. Expression of herpes simplex virus types 1 and 2 glycoprotein G in a baculovirus gene expression system. 15th International Herpesvirus Workshop, Washington D.C.

25. Stewart, J.A., J. Patton, J. Black, K. Sanderlin, J. Thomas, P.E. Pellett, and M. Yamamoto. 1990. Comparison of anti-complement immunofluorescence, immunoblot, and enzyme immunoassays for human herpesvirus 6 antibodies. 15th International Herpesvirus Workshop, Washington D.C.

26. Stewart, J.A., J. Patton, J. Black, K. Sanderlin, J. Thomas, P.E. Pellett, and M. Yamamoto. 1990. Comparison of anti-complement immunofluorescence, immunoblot, and enzyme immunoassays for human herpesvirus 6 antibodies. VIIIth International Congress of Virology, Berlin, Germany.

27. Meissner, C., P. Pellett, D. Fulton, D. Syndman, and J. Stewart. 1990. Association of human herpesvirus 6 (HHV-6) infection with severe, reversible encephalitis. 30th ICAAC, Atlanta, GA.

28. Pruksananonda, P., C.B. Hall, R.A. Insel, P.E. Pellett, and J.A. Stewart. 1990. Acute human herpesvirus 6 (HHV-6) infection in normal American children. 30th ICAAC, Atlanta, GA.

29. Stamey, F., T. Dambaugh, and P.E. Pellett. 1991. Construction and characterization of primer and probe sequences specific for six human herpesviruses for use in the polymerase chain reaction. 16th International Herpesvirus Workshop, Pacific Grove, CA.

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32. Stewart, J.A., P. Pellett, M. Davis, F. Stamey, and T. Spira. 1991. Detection methods for cytomegalovirus (CMV) in semen. 16th International Herpesvirus Workshop, Pacific Grove, CA.

33. P.E. Pellett, G.J. Lindquester, F.R. Stamey, R.M. Danovitch, E.G. Schirmer, N. Frenkel, E.D. Anton, C.A. Greenamoyer, J.J. O'Brian, S. Stack, and T.R. Dambaugh. 1991. Genomic and genetic architecture of human herpesvirus 6. Annual Meeting of the Laboratory of Tumor Cell Biology. Bethesda, MD.

34. P.E. Pellett, G.J. Lindquester, F.R. Stamey, R.M. Danovitch, E.G. Schirmer, N. Frenkel, E.D. Anton, C.A. Greenamoyer, J.J. O'Brian, S. Stack, and T.R. Dambaugh. 1991. Unique features of the human herpesvirus 6 genome. 5th International Conference on Immunobiology and Prophylaxis of Human Herpesvirus Infections, St. Petersburg, FL.

35. Zaki, S.R., P. Pellett, P.W. Greer, F.R. Stamey, C. Goldsmith, J. Alexander, and K.-W. Min. 1992. Herpetic lymphadenitis due to human herpesvirus-6 in a patient with Hodgkin's disease. United States and Canadian Academy of Pathology Annual Meeting, Atlanta, GA.

36. Stewart, J.A., J.L. Patton, J.B. Black, G.S. Marshall, and P.E. Pellett. 1992. Development of an enzyme immunoassay for human herpesvirus 7. Clinical Virology Symposium, Clearwater, FL.

37. Pellett, P.E.* 1992. Nucleic acid amplification technologies in the 90's: promise and reality. 8th Mediterranean Congress on Chemotherapy, Athens, Greece.

38. Pellett, P.E.* 1992. Genomic and genetic architecture of human herpesvirus 6. 1st International Herpesvirus Meeting In Japan, Osaka, Japan.

39. Black, J.B., J.L. Patton, J.A. Stewart, F.R. Stamey, and P.E. Pellett. 1992. Isolation of human herpesvirus 7 from saliva. 17th International Herpesvirus Workshop, Edinburgh, Scotland.

40. Pellett, P.E., D. Sanchez-Martinez, G. Dominguez, J.B. Black, J.L. Patton, J.A. Stewart, E.D. Anton, C.A. Greenamoyer, and T.R. Dambaugh. 1992. Identification and characterization of the human herpesvirus 6 strain Z29 gene encoding a strongly immunoreactive nucleocapsid protein homologous to the human cytomegalovirus nucleocapsid protein pp150. 17th International Herpesvirus Workshop, Edinburgh, Scotland.

41. Stewart, J.A., J.L. Patton, J.B. Black, G.S. Marshall, and P.E. Pellett. 1992. Development of an enzyme immunoassay for human herpesvirus 7 (HHV-7) antibodies. 17th International Herpesvirus Workshop, Edinburgh, Scotland.

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43. Inoue, N., T.R. Dambaugh, D. Sánchez-Martínez, G. Dominguez, and P.E. Pellett. 1993. Expression of the human herpesvirus 6 homolog of the adeno-associated virus type 2 *rep* gene and biochemical characterization of its product. Keystone Symposium on Molecular Biology of Human Pathogenic Viruses, Lake Tahoe, CA.

44. Pellett, P.E.*, N. Inoue, J.B. Black, S. Dewhurst, and T.R. Dambaugh. 1993. Unique genetic properties of human herpesvirus 6. Keystone Symposium on Molecular Biology of Human Pathogenic Viruses, Lake Tahoe, CA.

45. Dewhurst, S., S.C. Dollard, T.R. Dambaugh, P.E. Pellett, and B. Thomson. 1993. Progress towards the development of human herpesvirus 6 based vectors for anti-HIV intervention. AIDS Drug Discovery Meeting, Washington, DC.

46. P.E. Pellett. 1993. Status of HHV-6B genome sequencing. HHV-6 and HHV-7 Workshop, Pittsburgh, PA.

47. Stamey, F.R., J.B. Black, K. Kite-Powell, T.R. Dambaugh, and P.E. Pellett. 1993. Intragenomic linear amplification of the HHV-6B(Z29) ori*Lyt* region upon passage in cell culture. 18th International Herpesvirus Workshop, Pittsburgh, PA.

48. Black, J.B., G. Dominguez, F.R. Stamey, N. Inoue, and P.E. Pellett. 1993. Properties of the human herpesvirus 7 strain SB genome. 18th International Herpesvirus Workshop, Pittsburgh, PA.

49. Inoue, N., T.R. Dambaugh, D. Sanchez-Martinez, G. Dominguez, and P.E. Pellett. 1993. Expression and biochemical characterization of the HHV-6B(Z29) homologs of the HSV-1 UL9 protein and the adeno-associated virus type 2 *Rep* protein. 18th International Herpesvirus Workshop, Pittsburgh, PA.

50. Kadakia, M., P. Pellett, J. Stewart, C.M. Ihrig, W. Rybka, and J.A. Armstrong. 1993. Human herpesvirus 6 infection in the bone marrow transplant population. 18th International Herpesvirus Workshop, Pittsburgh, PA.

51. Pellett, P.E.* 1993. Unique genetic properties of human herpesvirus 6B. 18th International Herpesvirus Workshop, Pittsburgh, PA.

52. Pellett, P.E.* 1993. Biology and molecular biology of human herpesviruses 6 and 7. 6th International Conference on the Immunobiology and Prophylaxis of Human Herpesvirus Infections, Tomamu, Japan.

53. Pellett, P.E.*. 1993. New herpesvirus pathogens. National Academy of Sciences meeting on Changes in Human Ecology and Behavior: Effects on Infectious Diseases, Washington, DC.

54. Bloomer, C., L. Flebbe, T. Dambaugh, P. Pellett, and B. Chandran. 1994. Characterization of HHV-6B(Z-29) cDNAs derived from multiple differential splicing encoding the gp72-gp100 complex. 19th International Herpesvirus Workshop, Vancouver, Canada.

55. Dominguez, G., J.B. Black, N. Inoue, A.D. Palmer, and P.E. Pellett. 1994. Genes encoded by human herpesvirus 7. 19th International Herpesvirus Workshop, Vancouver, Canada.

56. Rapp, J.C., T.R. Dambaugh, and P.E. Pellett. 1994. Kinetics of parvovirus *rep* homolog mRNA accumulation during HHV-6B(Z29) infection of Molt-3 cells. 19th International Herpesvirus Workshop, Vancouver, Canada.

57. Kadakia, M., P.E. Pellett, F.R. Stamey, J.A. Stewart, J.L. Patton, M. Elsawy, W. Rybka, and J.A. Armstrong. 1994. Human herpesvirus 6 infection in bone marrow transplant recipients. 19th International Herpesvirus Workshop, Vancouver, Canada.

58. Stewart, J.A., J.B. Black, D. Brown, K. Kite-Powell, J.L. Patton, P.E. Pellett, D.S. Schmid, and A.C. Mawle. 1994. Case control study of herpesviruses in Chronic Fatigue Syndrome (CFS). 19th International Herpesvirus Workshop, Vancouver, Canada.

59. Inoue, N. and P.E. Pellett. 1994. Characterization of the DNA-binding of HHV-6B(Z29) origin binding protein to the HHV-6B(Z29) replication origin. 19th International Herpesvirus Workshop, Vancouver, Canada.

60. Pellett, P.E.* 1995. Emerging herpesvirus pathogens. 2nd National Congress on Infectious Diseases. Athens, Greece.

61. Pellett, P.E. 1995. Human herpesvirus 6 DNA replication. Southeastern Herpesvirus Conference. Atlanta, GA.

62. Pellett, P.E.* 1995. Emergence through discovery: human herpesviruses 6, 7, and 8. 95th Annual Meeting of the American Society for Microbiology, Washington, DC.

63. Black, J.B., G. Dominguez, F.R. Stamey, N. Inoue, J.C. Rapp, A. Palmer, L. Tate, and P.E. Pellett. 1995. Genomic and genetic architecture of human herpesvirus 7. International Conference on Human Herpesviruses 6 and 7, Atlanta, GA.

64. Black, J.B. T.F. Schwarz, E.L. Durigon, K. Kite-Powell, J.L. Patton, P.E. Pellett, L. de Souza, S. Weiresbitkzy, G. Jager, and J.A. Stewart. 1995. Comparison of immunoassays for detection of antibodies to human herpesvirus 7. International Conference on Human Herpesviruses 6 and 7, Atlanta, GA.

65. Black, J.B., J.L. Patton, K. Kite-Powell, P.E. Pellett, and J.A. Stewart. 1995. An enzyme immunoassay for detection of human herpesvirus 7 specific antibodies. International Conference on Human Herpesviruses 6 and 7, Atlanta, GA.

66. Black, J.B., D.A. Burns, K. Kite-Powell, C.S. Goldsmith, P. Feorino, and P.E. Pellett. 1995. Growth properties of human herpesvirus 7 strain SB and susceptibility to antiviral agents. 20th International Herpesvirus Workshop, Groningen, The Netherlands.

67. Dominguez, G., J.B. Black, F.R. Stamey, N. Inoue, J.C. Rapp, A. Palmer, L. Tate, and P.E. Pellett. 1995. Genomic and genetic architecture of human herpesvirus 7 strain SB and interstrain genetic variability. 20th International Herpesvirus Workshop, Groningen, The Netherlands.

68. Black, J.B. T.F. Schwarz, E.L. Durigon, K. Kite-Powell, J.L. Patton, P.E. Pellett, L. de Souza, S. Weiresbitkzy, G. Jager, and J.A. Stewart. 1995. Comparison of immunoassays for detection of antibodies to human herpesvirus 7 and seroprevalence in Germany and Brazil. 20th International Herpesvirus Workshop, Groningen, The Netherlands.

69. Pellett, P.E.* 1995. Biology and molecular biology of human herpesviruses 6 and 7. 7th International Conference on Immunobiology and Prophylaxis of Human Herpesvirus Infections, Tampa, FL.

70. Pellett, P.E.* 1995. Human herpesviruses 6, 7, and 8. Northern California Branch of the American Society for Microbiology/ Northern California Association of Public Health Microbiologists Fall Conference, Concord, CA.

71. Pellett, P.E.* 1996. Recently discovered human herpesviruses. New York City Branch of the American Society for Microbiology Annual Meeting, New York, NY.

72. Meng, Y-X, T Spira, and PE Pellett. 1997. Sequence heterogeneity in the human herpesvirus 8 gB and gH genes. Second International Conference on Human Herpesviruses 6, 7, and 8, Italy.

73. Stewart, J, J Patton, T Spira, C-P Pau, PE Pellett, K Kite-Powell, and JB Black. 1997. Development of an enzyme immunoassay (EIA) for human herpesvirus 8. Second International Conference on Human Herpesviruses 6, 7, and 8, Italy.

74. Stewart, J, J Patton, T Spira, C-P Pau, PE Pellett, K Kite-Powell, and JB Black. 1997. Development of an enzyme immunoassay (EIA) for human herpesvirus 8. 22nd International Herpesvirus Workshop. San Diego.

75. Pellett, P.E.*, Balada, E., Meng, Y-X., Tate, L. 1997. Genetic variation of human herpesviruses 6, 7, and 8. International Conference on Immunobiology and Immunoprophylaxis of Human Herpesvirus Infections, Mishima, Japan.

76. Pellett, P.E.* 1997. Human Herpesvirus 8. Eastern Pennsylvania Branch of the American Society for Microbiology Meeting on Infectious Agents and Chronic Disease, Philadelphia.

Teaching and Seminars:
Introduction to the UNIX operating system. Conceived, planned and taught this six session course, presented March and April 1985 to scientists at the Kovler Viral Oncology Laboratory, University of Chicago.

Computational analysis of nucleotide and protein sequences. Conceived, planned and taught this six session course, presented April and May 1985, to scientists at the Kovler Viral Oncology Laboratory, University of Chicago.

Molecular biology of the human herpesviruses. Lecture for a molecular virology course, February 1986, Georgia State University.

The biology and molecular biology of herpesvirus latency. Lecture for a virology course, April 1986, Emory University. The session was co-taught with Dr. Carlos Lopez.

Expression of cloned genes. Lecture for a CDC course on Molecular Biology, November 1986.

Molecular biology of the human herpesviruses. Lecture for a molecular virology course, Georgia State University, February 1987.

Human Herpesvirus 6 - A Preliminary Characterization. Seminar, DuPont Experimental Station, Wilmington, Delaware, December 1987.

Human Herpesvirus 6 - A Preliminary Characterization. Seminar, Chiron Corporation, Emeryville, California, February, 1988.

Human Herpesvirus 6 - A Preliminary Characterization. Seminar, University of Washington Medical Center, Seattle, Washington, March, 1988.

Non-Radioactive DNA Probe Technology. Lecture and laboratory for the CDC course, "Nucleic Acid Probe Technology", April, 1988.

Human Herpesvirus 6 - A Preliminary Characterization. Seminar, Georgia State University, May, 1988.

Evolutionary Relationships in the Herpesvirus Family. Lecture for a course in Viral Pathogenesis, Lousiana State University School of Veterinary Medicine, September, 1988.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Lousiana State University School of Veterinary Medicine, September, 1988.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Experimental Medicine and Pathology Seminar Series, Rockefeller University, March, 1989.

Human Herpesvirus 6: Diagnosis and Disease. Invited presentation. 5th Clinical Virology Symposium, Clearwater Beach, Florida, May 1-3, 1989.

Herpesviruses. Lecture. Recombinant DNA Workshop, Fernbank Science Center, Atlanta, GA, August, 1989.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Vakzine Institut, Basel, Switzerland, August, 1989.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. National Institute of Health, Tokyo, Japan, September, 1989

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Institute for Microbial Diseases, Osaka, Japan, October, 1989.

Herpesviruses. Lecture for virology course. Georgia State University, February, 1990.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Cetus Corporation, Emeryville, CA, February, 1990.

Post Translational Processing of Proteins. Lecture for Molecular Biology of the Cell course, CDC, February, 1990.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Emory University School of Medicine, Department of Microbiology and Immunology. Atlanta, GA, June, 1990.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Coulter Immunology. Miami, FL, November, 1990.

DNA Purification. Lecture for Techniques in Molecular Biology course, CDC, January, 1991.

Herpesvirus Latency, and Sequencing Large Viral Genomes. Lectures for Molecular Virology Course, Georgia State University, May, 1991.

Latency in Herpesviruses. Lecture in Microbial Pathogenesis course. CDC. June, 1991.

Herpesviruses. Lectures for Graduate Virology course, Emory University. March, 1992.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. University of Rochester. March, 1992.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Instutute Pasteur Hellinique, Athens, Greece. May, 1992.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. University of Pittsburgh. August, 1992.

Biology and Molecular Biology of Human Herpesvirus 6. Seminar. Georgia Institute of Technology. October, 1992.

Herpesviruses. Lecture. Meet the Viruses course, Centers for Disease Control. October, 1992.

Biology and Molecular Biology of Human Herpesviruses 6 and 7. Seminar. National Institute of Health, Tokyo. September, 1993.

Biology and Molecular Biology of Human Herpesviruses 6 and 7. Seminar. Emory University. November, 1993.

Beta- and Gammaherpesviruses. Graduate virology course. Lecture. Emory University. March, 1994.

Alpha- and Betaherpesviruses. Graduate virology course. Lectures. Georgia State University. April, 1994.

Biology and Molecular Biology of Human Herpesviruses 6 and 7. Seminar. University of Pittsburgh. November, 1994.

Biology and Molecular Biology of Human Herpesviruses 6 and 7. Seminar. University of Alabama at Birmingham. May, 1995.

Recently Discovered Human Herpesviruses. Seminar. Stanford University. November, 1995.

Human Herpesviruses 6, 7, and 8. Seminar. National Institute of Health, Tokyo, Japan. March, 1996

Human Herpesviruses 6, 7, and 8. Seminar. Jikei Medical University, Tokyo, Japan. March, 1996

Human Herpesviruses 6, 7, and 8. Seminar. Osaka University, Osaka, Japan. March, 1996

Human Herpesviruses 6, 7, and 8. Seminar. Fujita Health Sciences University, Nagoya, Japan. March, 1996

Viral Evolution. Graduate virology course. Emory University. April, 1996

Recently Discovered Human Herpesviruses. Emory University faculty seminar. Sept. 1996.

Recently Discovered Human Herpesviruses. Seminar. University of North Carolina at Greensboro. Oct. 1996.

Human Herpesvirus 8. Pediatric Infectious Diseases staff conference, Egleston Children's Hospital. Nov. 1996.

Recently Discovered Human Herpesviruses. Seminar. Ohio University. January, 1997.

Viral Evolution. Graduate virology course. Emory University. March, 1997

Molecular Microbiology. Veterinary Microbiology course. Tuskegee University School of Veterinary Medicine, April, 1997.

Recently Discovered Herpesviruses. Seminar. Tuskegee University School of Veterinary Medicine, April, 1997.

Recently Discovered Herpesviruses. National Teleconference. American Society of Clinical Pathologists. May, 1997.

Human Herpesviruses 6 and 7. Seminar. Abbott Laboratories. July, 1997.

Viral replication. Epidemiology and Virology course, CDC. September, 1997.

Human Herpesvirus 6. Mount Sinai Medical School. December, 1997.

Committee Assignments:

Division of Viral and Rickettsial Diseases Computer Committee, 3/87 to 1992.
Co-coordinator, Molecular Biology Interest Group, 9/87 to 9/89.
Search Committee for Viral Exanthems and Herpesvirus Branch Chief, 4/88 to 2/89.

Division of Viral Diseases Committee for Microbiologist's Position Review. 3/88 to 2/89.
Co-coordinator, CID "Molecular Biology of the Cell" course. 1990.
Search Committee for Special Pathogens Branch Chief, 6/90 to 12/90
NCID Antimicrobial Resistance Working Group. 1996-1997.
CDC New Infectious Diseases Building Working Group. 1996.

Meeting Organization:

Chair, special session on human herpesvirus 6, 14th International Herpesvirus Workshop, Nyborg Strand, Denmark, 1989.
Chair, DNA virus session at the 1st Southeast Virology Meeting, Atlanta, Georgia, 1991.
Co-chair, Molecular Biology session, 1st International Herpesvirus Symposium in Japan, 1992.
Co-organizer and co-chair, human herpesvirus 6 nomenclature session, 17th International Herpesvirus Workshop, Edinburgh, Scotland, 1992.
International Scientific Advisory Committee, 19th International Herpesvirus Workshop, Vancouver, Canada, 1994.
Co-chair, Genome Structure, Regulation, and Function session, HHV-6 and HHV-7 Workshop, Vancouver, Canada, 1994.
Organizer, International Conference on Human Herpesviruses 6 and 7, Atlanta, 1995.
Co-organizer, Southeastern Regional Herpesvirus Conference, Atlanta, 1995.
International Scientific Advisory Committee, 20th International Herpesvirus Workshop, Groningen, The Netherlands, 1995.
International Scientific Advisory Committee, 21st International Herpesvirus Workshop, Dekalb, IL, 1996.
Local Organizing Committee, 10th International Conference on Antiviral Research. Atlanta, 1997.
Organizing Committee, International Conference on Human Herpesviruses 6, 7, and 8, Pisa, Italy, 1997.